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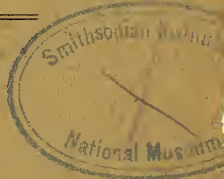
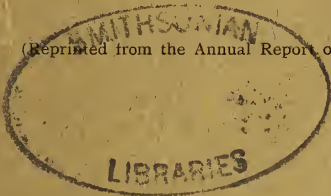
THE PRINCIPLES OF MUSEUM ADMINISTRATION,

BY

G. BROWN GOODE, M.A., LL.D.,

Assistant Secretary, Smithsonian Institution, in charge of U.S. National Museum; Member, National Academy of Sciences; American Philosophical Society; American Society of Naturalists; Fellow, American Academy of Arts and Sciences; Corresponding Member, American Institute of Architects, Société des Amis des Sciences Naturelles, Moscow; Société Zoologique de France; Zoological Society of London.

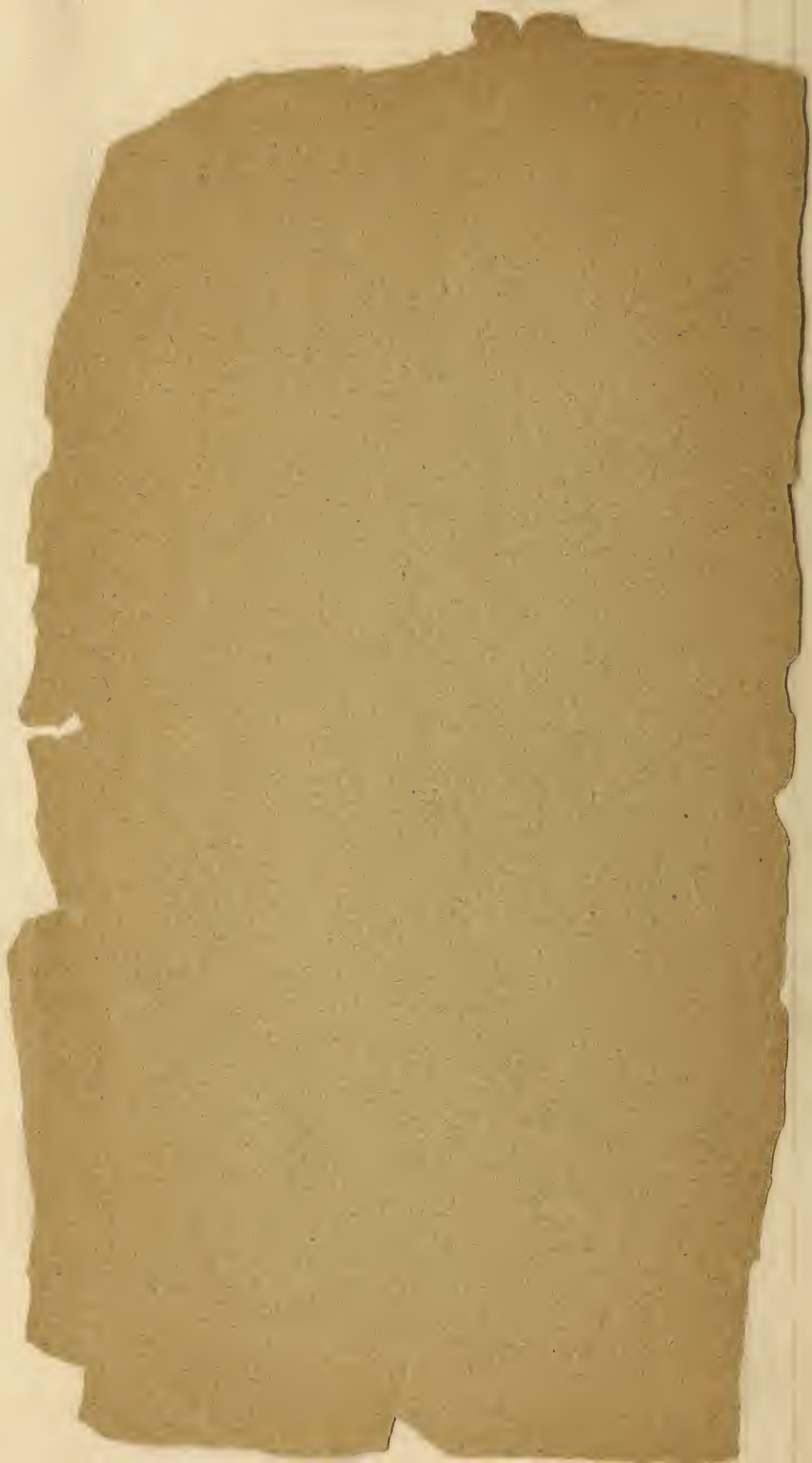
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ANALYSIS.

INTRODUCTION.

- I. THE MUSEUM AND ITS RELATIONSHIPS.
 - II. THE RESPONSIBILITIES AND REQUIREMENTS OF MUSEUMS.
 - III. THE FIVE CARDINAL NECESSITIES IN MUSEUM ADMINISTRATION.
 - IV. THE CLASSIFICATION OF MUSEUMS.
 - V. THE USES OF SPECIMENS AND COLLECTIONS.
 - VI. THE PRESERVATION AND PREPARATION OF MUSEUM MATERIALS.
 - VII. THE ART OF INSTALLATION.
 - VIII. RECORDS, CATALOGUES, AND SPECIMEN LABELS.
 - IX. EXHIBITION LABELS AND THEIR FUNCTION.
 - X. GUIDES AND LECTURERS; HANDBOOKS AND REFERENCE BOOKS.
 - XI. THE FUTURE OF MUSEUM WORK.
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INTRODUCTION.

IN an article on "The use and abuse of Museums" written nearly fifteen years ago by Professor William Stanley Jevons, it was stated that there was not at that time in the English language a treatise

analysing the purposes and kinds of Museums, and discussing the general principles of their management and economy. It is somewhat surprising that the lack then made so evident has not since been supplied and that there is not at the present day such a treatise in the English or any other language. Many important papers have in the interval been printed in regard to particular classes of Museums and special branches of Museum work. Notable among these have been the addresses by Sir William H. Flower on the uses and conduct of Natural History Museums. Among the especially significant general papers which had previously been printed, were Edward Forbes's suggestive essay on "The Educational Uses of Museums," dated 1853, and the still earlier one by Edward Edwards on "The Maintenance and Management of Public Galleries and Museums," printed in 1840.

No one, however, has as yet attempted, even in a preliminary way, to formulate a general theory of administration applicable to Museum work in all its branches, except Professor Jevons, who in the paper already referred to presented in an exceedingly suggestive manner the ideas which should underlie such a theory.

It is still true, however, as it was when Professor Jevons wrote in 1881, that there is not in existence "a treatise analysing the purposes and kinds of Museums and discussing the general principles of their management and economy." With this fact in mind, I have ventured to attempt the preparation of such a treatise, and to bring together in one systematic sequence the principles which I believe to underlie the policy of the wisest and most experienced of modern Museum administrators.

My ideas are presented in a somewhat dogmatic manner, often in the form of aphorisms, and possibly many of

them may sound like truisms to the experienced Museum administrator.

I have no doubt that my purpose in preparing this paper will be at once understood by the members of the Museums Association.

I have had two objects in view :

It has been my desire, in the first place, to begin the codification of the accepted principles of Museum administration, hoping that the outline which is here presented may serve as the foundation for a complete statement of those principles, such as can only be prepared by the co-operation of many minds. With this in view, it is hoped that the paper may be the cause of much critical discussion.

My other purpose has been to set forth the aims and ambitions of modern Museum practice, in such a manner that they shall be intelligible to the persons who are responsible for the establishment of Museums, and the conduct of other public institutions founded for similar purposes, in order to evoke more fully their sympathy and co-operation.

Museums of art and history, as well as those of science, are discussed in this paper, since the same general principles appear to be applicable to all.

The theses proposed are as follows :

I.—THE MUSEUM AND ITS RELATIONSHIPS.

A.—THE MUSEUM DEFINED.

I. A Museum is an institution for the preservation of those objects which best illustrate the phenomena of nature and the works of man, and the utilization of these for the increase of knowledge and for the culture and enlightenment of the people.

B.—THE RELATION OF THE MUSEUM TO OTHER INSTITUTIONS OF LEARNING.

1. The Museum in its effort for the increase and diffusion of knowledge aids, and is aided by the university and college, the learned society and the public library.

2. The special function of the Museum is to preserve and utilize objects of nature and works of art and industry: that of the library to guard the records of human thought and activity: that of the learned society to discuss facts and theories: that of the school to educate the individual:—while all meet together on common ground in the custodianship of learning, and in extending the boundaries of knowledge.

3. The care and utilization of material objects being the peculiar duty of the Museum, it should not enter the field of other institutions of learning, except to such a degree as may be found absolutely necessary in connection with its own work.

COMMENT.—For example, its library should contain only such books as are necessary for use within its own walls. Its publications should be solely those which are (directly or indirectly) the outgrowth of its own activities. Its teaching work should be such as cannot be performed by other institutions.

On the other hand, schools may advantageously limit their cabinets in accordance with the needs of their lecture-rooms and laboratories, and the library and the learned society should not enter the field of the museum, except in localities where Museum agencies are not provided.

C.—THE RELATION OF THE MUSEUM TO THE EXPOSITION.

1. The Museum differs from the Exposition or Fair both in aims and in method.

2. The Exposition or Exhibition and Fair are primarily for the promotion of industry and commerce; the Museum for the advancement of learning.

3. Of the former, the principal object is to make known the names of the exhibitors for their own professional or financial advantage; in the latter the name of the exhibitor is incidental, the thing chiefly in mind being the lesson taught by the exhibit.

4. Into the work of the former enters the element of competition coupled with a system of awards by diplomas or medals; in the latter, the element of competition does not appear.

5. The educational results of Expositions, though undeniably important, are chiefly incidental, and not at all proportionate to the prodigal expenditure of energy and money which are inseparable from every great Exposition.

D.—MUSEUM FEATURES ADOPTED IN EXPOSITIONS.

1. Museum methods have been in part adopted by many Expositions, in some instances to attract visitors, in others because it has been desired to utilize the occasion to give Museum lessons to multitudes to whom Museums are not accessible.

2. Those Expositions which have been most successful from an educational standpoint have been the ones which have most fully availed themselves of Museum methods,—notably the London Exhibition of 1851 and the Paris Exposition of 1889.

3. Special or limited Exhibitions have a relatively greater educational value, owing to the fact that it is possible in these to apply more fully the methods of the Museum. The four Expositions held in London in the last decade—Fisheries, Health, Inventions, and Colonial—are good illustrations.

4. The annual exhibitions of the academies of art are allied to the Exposition rather than to the Museum.

5. Many so-called "Museums" are really "permanent exhibitions," and many a great collection of pictures can only be suitably designated by the name "picture-gallery."

E.—TEMPORARY MUSEUMS.

1. There are many exhibitions which are administered in accordance with Museum principles, and which are really temporary Museums. To this class belong the best of the loan exhibitions, and also special exhibits made by public institutions, like the Luther "Memorial Exhibition" of 1894, the material for which was derived chiefly from the Library of the British Museum, and similar exhibitions subsequently held under the same auspices.

F.—MUSEUM METHODS IN OTHER INSTITUTIONS.— "MUSEUM EXTENSION."

1. The Zoological Park, the Botanical garden and the Aquarium, are essentially Museums, and the principles of Museum administration are entirely applicable to them.

2. An Herbarium in its usual form corresponds to the study-series in a Museum, and is capable of expansion to the full scope of the general Museum.

3. Certain churches and ecclesiastical edifices as well as antiquities in place, when they have been pronounced "public monuments," are subject to the principles of Museum administration.

4. Many cities, like Rome, Naples, Milan and Florence, by reason of the number of buildings, architectural features, sculpture and other objects in the streets and squares, together with the historical houses duly labelled by tablets, have become practically great Museums and these various objects are administered much in the manner of Museums. Indeed the number of "public monuments" in Italy is so great that the whole country might properly be described as a Museum of art and history. A

government commission for the preservation of the monuments of history and art regulates the contents of every church, monastery, and public edifice, the architectural features of private buildings, and even private collections, to the extent of requiring that nothing shall be removed from the country without governmental sanction. Each Italian town is thus made a Museum, and in Rome, the site of the Forum and the adjacent structures has been set aside as an outdoor Museum under the name of the *Passegiata Archeologica*. Similar government control of public monuments and works of art exists in Greece, and Egypt, and in a lesser degree in the Ottoman Empire; and for more than half a century there has been a Commission of Historic Monuments in France, which has not only efficiently protected the national antiquities, but has published an exceedingly important series of descriptive monographs concerning them.

II.—THE RESPONSIBILITIES AND REQUIREMENTS OF MUSEUMS.

A.—THE RELATION OF THE MUSEUM TO THE COMMUNITY.

1. The Museum supplies a need which is felt by every intelligent community and which cannot be supplied by any other agency. The Museum does not exist except among highly enlightened peoples, and attains its highest development only in great centres of civilization.

2. The Museum is more closely in touch with the masses than the university and learned society, and quite as much so as the public library, while even more than the last, it is a recent outgrowth of modern tendencies of thought. Therefore—

3. THE PUBLIC MUSEUM IS A NECESSITY IN EVERY HIGHLY CIVILIZED COMMUNITY.

B.—THE MUTUAL RESPONSIBILITIES OF THE COMMUNITY AND THE MUSEUM.

1. The Museums in the midst of a community perform certain functions which are essential to its welfare, and hence arise mutual responsibilities between the community and the Museum administrator.

2. The Museum administrator must maintain his work with the highest possible degree of efficiency in order to retain the confidence of the community.

3. The community should provide adequate means for the support of the Museum. (See Chapter III.)

4. A failure on the part of one leads inevitably to a failure on the part of the other.

C.—THE SPECIFIC RESPONSIBILITIES OF THE MUSEUM.

1. The Museum should be held responsible for special services, chiefly as follows :

a. For the advancement of learning.

To aid learned men in the work of extending the boundaries of knowledge, by affording them the use of material for investigation, laboratories and appliances.

To stimulate original research in connection with its own collections, and to promote the publications of the results.

b. For record.

To preserve for future comparative and critical study the material upon which studies have been made in the past, or which may confirm, correct, or modify the results of such studies. Such materials serve to perpetuate the names and identifications used by investigators in their publications, and thus

authenticated, are useful as a basis for future investigation in connection with new material. Specimens which thus vouch for the work of investigators are called *Types*. Besides *Types*, Museums retain for purposes of record many specimens which, though not having been used in investigation, are landmarks for past stages in the history of man and nature.

c. As an adjunct to the class-room and the lecture-room.

To aid the teacher either of elementary, secondary, technological, or higher knowledge in expounding to his pupils the principles of Art, Nature, and History, and to be used by advanced or professional students in practical laboratory or studio work.

To furnish to the advanced or professional student, materials and opportunity for laboratory training.

d. To impart special information.

To aid the occasional enquirer, be he a laboring-man, schoolboy, journalist, public speaker, or savant, to obtain, without cost, exact information upon any subject related to the specialties of the institution; serving thus as a "Bureau of Information."

e. For the culture of the public.

To serve the needs of the general public, through the display of attractive exhibition series, well-planned, complete and thoroughly labelled; and thus to stimulate and broaden the mind of those who are not engaged in scholarly research, and to draw them to the public library and the lecture room. In this respect the effect of the Museum is somewhat analogous to that of travel in distant regions.

2. A Museum to be useful and reputable, must be constantly engaged in aggressive work, either in education or investigation, or in both.

3. A Museum which is not aggressive in policy and constantly improving, cannot retain in its service a competent staff, and will surely fall into decay.

4. A FINISHED MUSEUM IS A DEAD MUSEUM, AND A DEAD MUSEUM IS A USELESS MUSEUM.

5. Many so-called "Museums" are little more than storehouses filled with the materials of which Museums are made.

D.—THE RESPONSIBILITY OF MUSEUMS TO EACH OTHER.

1. There can be no occasion for envious rivalry between Museums even when they are in the same city. Every good Museum strengthens its neighbours, and the success of the one tends to the popularity and public support of the others.

2. A system of co-operation between Museums is seemingly possible by means of which much duplication of work and much expenditure of money may be avoided.

3. The first and most important field for mutual understanding is in regard to specialization of plan. If Museums in the same town, province, or nation, would divide the field of work so that each should be recognized as having the first rights in one or more specialties, rivalry would be converted into friendly association, and the interests of science and education better served.

4. An important outcome of such a system of co-operation might be the transfer of entire groups of specimens from one Museum to another. This would greatly facilitate the work of specialization referred to, and at the same time relieve each Museum of the responsibility of maintaining collections which are not germane to its real purpose. Such transfers have occasionally been made in the past and there are few Museums which might not benefit individually, in a large degree, by a sweeping

application of this principle. If its effect on the attractiveness and interest of any local or national group of Museums be taken into account, as no one can doubt that the result would be exceedingly beneficial.

5. Another field for co-operation is in joint expenditure of effort and money upon labels and catalogues, and in the economical purchase of supplies and material.

COMMENT.—In the United States, for instance, the iron moulds for specimen jars used for terra cotta mounting tablets, and the dies used in rolling the metal guiding strips for supporting the drawers in specimen cabinets, which have been made at considerable expense for the National Museum, are placed without cost at the disposition of other Museums; drawings and specifications for the construction of cases, and many other results of experiment in this Museum, are placed at the service of all others.

6. Still another would lie in the co-operative employment of expert curators and preparators, it being thus practicable to pay larger salaries and secure better men.

COMMENT.—The curator of Graphic Arts in the United States National Museum is the custodian of the collection of engravings in the Boston Museum of Fine Arts, giving part of his time to each institution—an arrangement advantageous to both.

III.—THE FIVE CARDINAL NECESSITIES IN MUSEUM ADMINISTRATION.

A Museum cannot be established and creditably maintained without adequate provision in five directions:

A. A stable organization and adequate means of support.

B. A definite plan, wisely framed in accordance with the opportunities of the institution and the needs of the community for whose benefit it is to be maintained.

C. Material to work upon—good collections or facilities for creating them.

D. Men to do the work—a staff of competent curators.

E. A place to work in—a suitable building.

F. Appliances to work with—proper accessories, installation materials, tools, and mechanical assistance

A.—STABILITY OF ORGANIZATION.

1. The only absolute assurance of permanence for a Museum lies either in governmental protection, or in a connection with some endowed institution of learning, or in special organization with ample endowments.

2. The cabinets of unendowed societies, or those gathered and supported by the efforts of individuals, must inevitably in time be dispersed or destroyed.

B.—DEFINITENESS OF PLAN.

1. No two Museums can be or ought to be exactly alike. Each should be devoted to one or more special subjects, and should select those subjects not only with reference to opportunity and the needs of the community, but also with regard to the specialties of other Museums in the same region with a view to co-operation.

2. It is the duty of every Museum to be pre-eminent in at least one specialty, be this specialty never so limited.

3. The specialties or departments of any Museum may be few or many, but it is important that its plan should be positively defined and limited, since lack of purpose in Museum work, leads in a most conspicuous way to a waste of effort, and to partial or complete failure.

4. It will undoubtedly be found desirable for certain Museums, founded for local uses, to specialize mainly in the direction of popular education. If they cannot also provide for a certain amount of scholarly endeavour in connection with the other advantages, it would be of the utmost importance that they should be associated (by a system of co-operation) with some institution which is in the position of being a centre of original work.

5. The general character of a Museum should be clearly determined at its very inception. Specialization and division of labor are essential for institutions as well as

for individuals. It is only a great national Museum which can hope to include all departments, and which can with safety encourage growth in every direction.

6. Small Museums, it is needless to say, cannot attempt specialization in the same degree as large ones, but the principles just enunciated should be constantly kept in view even by the least of them.

C.—COLLECTIONS.

1. The sources of collections are the following: (*a*) by gift; (*b*) by purchase; (*c*) by exchange; (*d*) by collecting and exploration; (*e*) by construction; (*f*) through deposit or temporary loan.

a. By gift.

Acquisition by gift is a most important source, but very uncertain. If a Museum has a plan to which it intends to adhere, a large proportion of the gifts offered to it will be unavailable; while on the other hand only a small proportion of the desiderata will ever be thus obtained. A Museum may properly, by the offer of a large and complete collection illustrating a subject outside of its plan, be induced to expand its scope. In the case of a large benefaction of this kind, necessitating extensive changes in installation, there will always be careful consideration of the result. It should be borne in mind, however, that the random, thoughtless acceptance of proffered gifts which insignificant in itself but in the course of a few years by no means insignificant in the consumption of space and money for their care, may modify the plan of a Museum in a most radical manner. It requires quite as much judgment and mental effort on the part of a Museum officer to keep out unsuitable objects as to bring in those which are desirable.

b. By purchase.

Acquisition by purchase is often the only means of obtaining desirable objects, particularly so in the case of Art Museums, least so in Natural History Museums. Money is especially necessary for the filling of gaps in series obtained by gift or otherwise.

c. By exchange.

Acquisition by exchange is especially advantageous, since it enables a Museum to dispose of unavailable duplicate material. When exchanges are made with well conducted Museums, there is the additional advantage that the materials thus obtained have been studied and identified by expert authorities. Little is gained by conducting exchanges in a commercial spirit and in insisting on too exact valuations and balancing of equivalents, especially when the parties to the exchange are public institutions. Large Museums in dealing with small ones may often advantageously give largely and receive comparatively little in return, since they not only become disencumbered of useless duplicates not desired by institutions of equal rank, but they are also building up sister institutions which may in time afford them much more substantial aid. Exchanges with private collectors may well be carried on in the same spirit, since the collector is thus encouraged to gather more material, in the midst of which unexpected treasures may come to light, and is also aided to build up a private collection which in time will probably fall into the hands of some public Museum.

d. By collecting and exploration.

For all Museums save those of art this is usually the most profitable and satisfactory, since by gathering fresh material in unexplored fields, new facts are

discovered, science is enriched, and the reputation of the institution improved. Furthermore, material is obtained in such large quantities that there always remains much in the way of duplicate specimens valuable for exchange. A Museum which carries its activities into unexplored fields, secures for itself material which will always be unique and unobtainable by others, and thus makes itself a centre of interest for the entire world.

The smallest Museum can enrich its collections and make contributions to enlarge others by modest explorations under its own walls ; it can do much by simply encouraging the people in the adjacent region to save what they accidentally encounter in the course of their daily pursuits. Explorations of this kind are pre-eminently the function of the local and provincial Museum.

e. By construction.

Any Museum may do much to enrich its exhibition series by the construction of models and the making of drawings and maps and by making copies of important objects in its own collections to secure material to be used in exchange. Even small Museums may do this, for extensive workshops are not necessary. A specialist himself devoid of mechanical skill may accomplish marvellous things with the aid of a patient mechanic.

f. Through deposit and temporary loan.

Possessors of private collections will often lend them for purposes of exhibition or study, if assured that they will be properly cared for. Such loan collections often become permanent gifts. Single specimens, or small groups of objects, still more frequently

are offered on deposit, and such deposits when within the province of the Museum should be encouraged.

COMMENT.—In the United States National Museum small deposits are received for short periods, but large collections involving trouble and expense in installation, only with the understanding that they shall not be removed within a certain period—never less than two years.

2. Collections which are encumbered by conditions as to manner of disposition and installation are usually sources of serious embarrassment. It is especially undesirable to accept either as a gift or as a loan any unimportant collection with the pledge that it shall be kept intact and installed as a unit. The acceptance of any collection, no matter how important, encumbered by conditions, is a serious matter, since no one can foresee how much these conditions may interfere with the future development of the Museum.

3. Gifts, deposits, and co-operation of all kinds may be greatly encouraged by liberal acknowledgment upon labels and in public reports. This is but simple justice to the generosity of the benefactor. It is also a legitimate way to gratify a natural and praiseworthy sentiment; for a collection to the accumulation of which a man has devoted a lifetime becomes so connected with his personality, that it is but natural that he should wish his name to be permanently associated with it. If acknowledgment of this kind is made upon the individual label of each specimen, this will usually fully satisfy the desire of the donor that the individuality of his gift should be preserved, an arrangement much more satisfactory than one requiring that the objects shall be kept together and treated as a unit for installation.

Gifts and deposits may also be encouraged by the fact that the buildings are fire-proof, the cases so built as to afford perfect protection, and the scheme of installation

dignified and attractive. Collections of great value may to advantage be afforded accommodations of a specially sumptuous character, and such protection, in case of priceless objects, as is afforded by special electric attachments.

4. Notwithstanding what has been said about the importance of specialization, it is often necessary for a Museum to accept collections of objects not at all germane to its plan. This is particularly so in Provincial Museums, when valuable private cabinets are offered as gifts. It may be impolitic for an institution to refuse such an offer, and it is much less disastrous to receive a special collection to be installed as a unit, than to accept numerous promiscuous gifts. In time, in all probability, a collection of this kind can be transferred to the custody of some other institution in the same town, and the Museum which has housed it in the meantime has deserved well of the community by preserving for it a valuable possession.

5. Since the plan and character of a Museum is largely determined for all time by the nature of the collections which fall first into its possession, at the time of its organization, the authorities temporarily in charge of such an institution at the time of organization should be exceedingly careful in accepting materials which are to serve as a nucleus for its future growth.

COMMENT.—It is not unusual for boards of trustees, having erected a building, to proceed at once to partially fill it with showy material before the staff has been appointed or a plan considered. This can only be characterized as "pernicious activity," which is certain to result in more harm than good. A plan having been determined upon and a director selected, the collections may be developed at much less expenditure and with any degree of rapidity which may be desired.

D.—MUSEUM OFFICERS.

1. A Museum without intelligent, progressive, and well-trained Curators is as ineffective as a school without teachers, a library without librarians, or a learned society without a working membership of learned men.

2. Museum administration has become one of the learned professions, and success in this field can only be attained as the result of years of study and of experience in a well-organized Museum. Intelligence, a liberal education, administrative ability, enthusiasm, and that special endowment which may be called "the Museum sense," are pre-requisite qualifications.

Each member of a Museum staff should become an authority in some special field of research, and should have time for investigation and opportunity to publish its results.

3. A Museum which employs untrained Curators, must expect to pay the cost of their education in delays, experimental failures, and waste of materials.

4. No investment is more profitable to a Museum than that in its salary fund, for only when this is liberal may the services of a permanent staff of men of established reputation be secured.

Around the nucleus of such a staff will naturally grow up a corps of volunteer assistants, whose work properly assisted and directed will be of infinite value.

5. "Collaborators" or "Associates," as well as Curators, may be placed upon the staff of a large Museum, the sole duty of the former being to carry on investigations, to publish, and, if need be, to lecture.

6. Volunteers may be advantageously employed either as Curators and custodians, or Collaborators. Such co-operation is especially desirable and practicable when a Museum is situated in the same town with a college, or

university, or in a national capital where there are scientific bureaus connected with the Government. Professors in a university or scientific experts in the Government service, often find it of great advantage to have free access to the facilities afforded by a Museum, and are usually able to render useful service in return. Younger men in the same establishments may be employed as volunteer-aids, either in the Museum or in the field.

7. No man is fitted to be a Museum officer who is disposed to repel students or inquirers, or to place obstacles in the way of access to the material under his charge.

8. A Museum officer or employé should, for obvious reasons, never be the possessor of a private collection.

9. The Museum which carries on explorations in the field as a part of its regular work has great advantages over other institutions in holding men of ability upon its staff and in securing the most satisfactory results from their activities. No work is more exhausting to body and mind than the care of collections, and nowhere are enthusiasm and abundant vitality more essential. Every Museum must constantly obtain new material through exploration, and it is better that this exploration should be done by the men who are to study the collections and arrange them, than that this should be placed in the hands of others. The necessity of exploration, from another point of view, has already been spoken of.*

10. In a large Museum staff it is almost essential that certain persons should give their attention chiefly to administrative and financial matters, thus leaving their associates free from occupation of this description. The business affairs of a Museum cannot be conducted with too great promptness and precision. It is desirable, how-

* III. C., 1, d.

ever, that the administrative officers of a Museum should be men who comprehend the meaning of Museum work and are in sympathy with its highest aims, and that its business affairs and scientific work should be controlled by the same executive head.

E.—MUSEUM BUILDINGS.

1. The Museum building should be absolutely fire-proof and substantially constructed; the architecture simple, dignified and appropriate—a structure worthy of the treasures to be placed within.

2. Above all things the interior should be well lighted and ventilated, dry and protected from dust. The halls should be well-proportioned, the decoration simple and restful to the eye. No decorative features should be permitted which tend to draw attention from the collections or reduce the floor or wall spaces.

3. While the Museum building should be planned with reference to the character of the collections it is to contain, the fact that unexpected development or rapid growth in some one direction may necessitate the re-arrangement and reassignment of halls to different departments should always be borne in mind.

4. Since no two Museums can be alike, there can be no general uniformity in their buildings. It is manifestly undesirable then that a board of trustees should erect a building for a Museum before its character is decided upon or its staff appointed; or that the opinion of the architect of a Museum building should be allowed to overweigh the judgment of the experts who are responsible for its utilization after completion. Museum architecture affords no exception to the principle that an edifice should be perfectly adapted to the purpose for which it is

designed. No architectural effect which lessens the usefulness of the building can be pleasing to an intelligent public.

F.—ACCESSORIES TO MUSEUM WORK.

1. A well-equipped Museum requires as accessories to its work—

A. A reference library, for the use of staff, students and visitors.

B. Laboratories for the classification of material; for the storage of the study-series, and for the use of students and investigators.

C. Workshops for preparation, mounting and repair of specimens, and for the making and adjustment of mounts and cases, and storage rooms for material not yet available. (A printing press is an essential feature.)

D. An assembly hall for public lectures, society meetings, and special exhibitions.

E. A bulletin, or other official publication, to preserve the history of its activities, to maintain its standing among similar institutions, to serve as a means of communication with correspondents, and to exchange for specimens and books for the library.

2. In addition to local accessories, the opportunity for exploration and field work are equally essential, not only because of considerations connected with the efficiency of the staff already referred to (see III. D., 1), but in behalf of the general welfare of the institution. Other things being equal, exploration can be carried on more advantageously by the Museum than by any other institution of learning, and there is no other field of research which it can pursue to better advantage.

IV.—CLASSIFICATION OF MUSEUMS.

Museums may best be classified in two ways; by the character of their contents, and by the purposes for which they are founded.

Under the first category they may be grouped as follows :

A. Museums of Art; B. Historical Museums; C. Anthropological Museums; D. Natural History Museums; E. Technological Museums; F. Commercial Museums.

Under the second category they may be classed as :

G. National Museums; H. Local, Provincial, or City Museums; I. College and School Museums; J. Professional or Class Museums; K. Museums or Cabinets for special research owned by societies or individuals.

COMMENT.—In the reference to special Museums in this chapter, nothing has been further from my idea than to catalogue existing Museums. Many of the most important are not even referred to by name. I have spoken only of those which are especially familiar to myself, and which seem to be the best illustration of the idea in connection with which they are named.

A.—ART MUSEUMS.

1. The Museum of Art is a Depository for the æsthetic products of man's creative genius, such as paintings, sculptures, architecture (so far as it can be shown by models, drawings and structural fragments), and specimens of the illustrative arts, (such as engravings) and illustrations of the application of art to decorative uses.

2. The greater art collections illustrate, in a manner peculiarly their own, not only the successive phases in the intellectual progress of the civilized races of man, their sentiments, passions, and morals, but also their habits and customs, their dress, implements, and the minor accessories of their culture often not otherwise recorded.

3. Museums of Art, wherever they may be situated, have a certain general similarity to each other in purpose, contents and method of management. Those which most fully represent the art of the communities to which they belong, other things being equal, are the most useful and famous.

COMMENT.—Since Cosmo de' Medici founded in Florence at the beginning of the sixteenth century, the Museum of the Uffizi—perhaps the oldest Museum of Art now in existence,—every great city in the civilized world has become the seat of a Museum or gallery of art. Besides the great general collections of art, there are special Museums devoted to the work of single masters, such as the Thorwaldsen Museum in Copenhagen, and the one at Brussels containing only the works of the eccentric painter, Wiertz; the Donatello Museum in the Bargello at Florence, and the Michel Angelo Collections in its Academy of Fine Arts and in the Casa Buonarrotti.

4. The distinction between an Art Museum and a Gallery of Art is a valid one. It depends upon the system of Administration, and the character of the officers who control it.

COMMENT.—The scientific tendencies of modern thought have permeated every department of human activity, even influencing the artist. Many art galleries are now called Museums, and the assumption of the name usually tends toward the adoption in some degree of a scientific method of installation. The Cluny Museum in Paris is, notwithstanding its name, simply a gallery of curious objects. Its contents are arranged primarily with reference to their effect. The old monastery in which they are placed, affords a magnificent example of the interior decorative art of the Middle Ages.

The Cluny Museum is a most fascinating and instructive place. I would not have it otherwise than it is, but it will always be unique, the sole representative of its kind. The features which render it attractive would be ruinous to any Museum. It is, more than any other that I know, a collection from the standpoint of the artist. The same material, in the hands of a Klemm or Pitt Rivers, arranged to show the history of human thought, would, however, be much more interesting, and, if the work were judiciously done, would lose none of its æsthetic allurements.

Another collection of the same general character as the one just described is the Soane Museum in London. Another, the famous collection

of crown jewels and metal work in the Green Vaults at Dresden, a counterpart of which may be cited in the collection in the Tower of London. The Museum of the Hohenzollerns in Berlin and the Museum of the City of Paris are of necessity unique. Such collections can not be created. They grow in obedience to the action of natural law, just as a tree or a sponge may grow.

The city which is in the possession of such an heirloom is blessed just as is the possessor of an historic surname, or he who inherits the cumulative genius of generations of gifted forefathers. The possession of one or a score of such shrines does not however, free any community from the obligation to form a Museum for purposes of education and scientific research.

B.—HISTORICAL MUSEUMS.

1. The Museum of History preserves those material objects which are associated with events in the history of individuals, nations, or races, or which illustrate their condition at different periods in their national life.

2. Every Museum of Art and every Archæological Museum is also a Museum of History since it contains portraits of historical personages, pictures of historical events, and delineations of customs, costumes, architecture and race characteristics.

COMMENT.—Historical Museums are manifold in character, and usually of local interest. Some relate to the histories of provinces and cities. One of the oldest and best of these is the Provincial Museum of the Mark of Brandenburg in Berlin. Of the same class are the Museum of the City of Paris in the Hotel Canavelet, and the Museums of the City of Brussels and the City of Antwerp.

Others illustrate the early history of a race or country, such as the Musée Gallo-Romain at St. Germain, the Romano-German Museum at Mainz, the Etruscan Museums at Florence and Bologna, the Ghizeh Museum near Cairo, the Acropolis Museum at Athens, and the Museums at Constantinople.

Such institutions as the Bavarian National Museum at Nuremberg and the German National Museum in Munich have to do with later periods of history, and there are throughout Europe numerous collections of armor, furniture, costumes, and architectural and other objects, illustrating the life and arts of the middle ages and the later periods, which are

even more significant from the standpoint of the historian than from that of the artist. Important among these are the Royal Irish Academy at Dublin, and the Musée des Thermes—the “Cluny Museum”—in Paris.

Many of the cathedrals of Europe are essentially either Civic or National Museums, and such edifices as Saint Paul's and Westminster Abbey belong pre-eminently to the latter class.

There are Biographical Museums, either devoted to single men, like the Galileo, Dante, and Buonarrotti Museums in Florence, or the Goethe Museum in Weimar, and the Beethoven Museum in Bonn; to the great men of a nation, as the National Portrait Gallery of Great Britain, the German Valhalla at Ratisbon, etc.; or to great men of a special profession, such as the Gallery of Artists in the Pitti Museum of Florence.

In this connection would come also collections of autographs and manuscripts (like the Dyce-Forster Collection at South Kensington), and collections of personal relics.

Midway between the Museum of History and that of Biography stands the Dynastic or Family Museum, such as the Museum of the Hohenzollerns in Berlin, and that section of the Kunsthistorisches Museum in Vienna which illustrates the history of the Hapsburg. The Musée Historique de Versailles is similar in its aims.

C.—ANTHROPOLOGICAL MUSEUMS.

1. The Museum of Anthropology includes such objects as illustrate the natural history of Man, his classification in races and tribes, his geographical distribution, past and present, and the origin, history and methods of his arts, industries, customs and opinions, particularly among primitive and semi-civilized peoples.

2. Museums of Anthropology and History meet on common ground in the field of Archæology. In practice, Historic Archæology is usually assigned to the latter, and Prehistoric Archæology to the former. This is partly because Historical Museums, which are usually national in scope and unsupported on documentary evidence, treat the prehistoric races as extralimital; partly because prehistoric material is studied to best advantage through the natural history methods in use among anthropologists but not among historical students.

COMMENT.—Ethnographic Museums were proposed half a century ago by the French geographer Jomard, and the idea was first carried into effect about 1840 in the establishment of the Danish Ethnographical Museum. In Germany, there are Anthropological Museums, in Berlin, Dresden and Munich, and the Museum für Volkerkunde in Leipsic ; in Austria, the Court and the Oriental Museums in Vienna ; in Holland, the Ethnographical Museum in Leyden, and smaller ones in Amsterdam, Rotterdam and at The Hague ; in France, the Trocadero ; in Italy, the important Prehistoric and Ethnographic Museums in Rome and Florence ; in Spain, the Philippine Collections in the Museo de Ultramar in Madrid ; and in Hawaii, the Bernice Pauahi Bishop Museum, at Honolulu.

In England less attention has been given to the subject than elsewhere in Europe, the Christy Collection in the British Museum, the Pitt Rivers Collection at Oxford and the Blackmore Museum at Salisbury being the most important ones specially devoted to ethnography. In the United States, the Peabody Museum of Archæology in Cambridge, the collections in the Peabody Academy of Sciences at Salem, and the American Museum of Natural History in New York are arranged ethnographically, while the ethnological collections in the National Museum in Washington are classified on a double system,—one with regard to race ; the other, like the Pitt Rivers Collection intended to show the evolution or development of culture and civilization without regard to race. This broader plan admits much material excluded by the advocates of Ethnographic Museums, who devote their attention almost exclusively to the primitive or non-European peoples.

Closely related to the Ethnographic Museum, are others devoted to some special field, such as the Musée Guimet in Paris, which is intended to illustrate the history of religious ceremonial among all races of men, a field also occupied by one department of the National Museum in Washington. Other good examples of this class are some of those in Paris, such as the Musée de Marine, which shows not only the development of the merchant and naval marines of the country, but also, by trophies and other historical souvenirs, the history of the naval battles of the nation ; and the Musée d' Artillerie, which has a rival in Madrid.

Of Musical Museums, perhaps the most important are Clapisson's Musée Instrumental in Paris ; that in Brussels and that in the National Museum at Washington. The collection of musical instruments at South Kensington has had its contents selected chiefly with reference to their suggestiveness in decorative art.

The Theatrical Museum at the Académie Française in Paris, the Museum of Journalism at Antwerp, the Museums of Pedagogy in Paris

and St. Petersburg, are professional rather than scientific or educational, as are also the Museum of Practical Fish Culture at South Kensington, the Monetary Museum at the Paris Mint, the Museums of Hygiene in London and Washington, and the United States Army Medical Museum.

The value of archæological collections, both historic and prehistoric has long been understood. The Museums of London, Paris, Berlin, Copenhagen and Rome need no comment. In the Peabody Museum in Cambridge, the American Museum in New York, the Museum of the University of Pennsylvania and the National Museum in Washington are immense collections of the remains of prehistoric man in America.

3. There are many objects now in the custody of Art Museums, which would be more appropriately placed, if in the Museums of Anthropology or History.

COMMENT.—There are special collections on the boundary line between art and ethnology, the manner of best installation for which has scarcely yet been determined. The Louvre admits within its walls a Museum of ship models. South Kensington includes musical instruments, and many other objects equally appropriate in an ethnological collection. Other Art Museums take up art and armor, selected costumes, shoes, and articles of household use. Such objects, like porcelains, laces, medals, and metal work, appeal to the Art Museum Administrator through their decorations and graceful forms. For their uses he cares presumably nothing. As a consequence of this feeling, only articles of artistic excellence has been saved, and much has gone to destruction which would be of the utmost importance to those who are now studying the history of human thought in the past.

On the other hand, there is much in Art Museums which might to much better purpose be delivered to the ethnologist for use in his exhibition cases. There is also much which the Art Museum, tied as it often is to traditional methods of installation, might learn from the scientific Museums.

Many of the arrangements in the European art collections are calculated to send cold shivers down the back of a sensitive visitor. The defects of these arrangements have been well described by a German critic, W. Bürger. "Our Museums," he writes, "are the veritable grave-yards of art in which have been heaped up, with a tumulous-like promiscuousness, the remains which have been carried thither. A Venus is placed side by side with a Madonna, a satyr next to a saint. Luther is in close proximity to a Pope, a painting of a lady's chamber next to that of a church. Pieces executed for churches, palaces, city halls, for a particular edifice, to teach some moral or historic truth, designed for some especial light, for some

well studied surrounding, all are hung pell-mell upon the walls of some non-committal gallery—a kind of posthumous asylum, where a people, no longer capable of producing works of art, come to admire this magnificent gallery of débris.”

D.—NATURAL HISTORY MUSEUMS.

1. The Museum of Natural History is the depository for objects which illustrate the forces and phenomena of nature,—the named units included within the three kingdoms, animal, vegetable and mineral,—and whatever illustrates their origin in time (or phylogeny) their individual origin, development, growth, function, structure, and geographical distribution—past and present; also their relation to each other, and their influence upon the structure of the earth and phenomena observed upon it.

2. Museums of Natural History and Anthropology meet on common ground in Man. In practice, the former usually treats of Man in his relations to other animals, the latter of Man in his relations to other men.

COMMENT.—In most national capitals, there are general Museums in which collections representing the three kingdoms of nature are included in one group. Among the oldest and most prominent types of this class are the British Museum of Natural History in South Kensington and the Musée d' Histoire Naturelle in Paris, and there are numerous others in the great cities of both hemispheres.

Among specialized natural history collections, a good type is the Museum of Comparative Zoology in Cambridge, Massachusetts, founded by Agassiz to illustrate the history of creation, as far as the present state of knowledge reveals that history, which was in 1887 pronounced by Alfred Russell Wallace to be far in advance of similar institutions in Europe, whether as regards the general public, the private student, or the specialist.

Next in order after the Zoological Sections of the Museums in London and Paris, stands those of the Imperial Cabinet in Vienna; those in Berlin, Leyden, Copenhagen, Christiania, Brussels and Florence, and the La Plata Museum in Argentina, so rich in paleontological material.

The best type of the Botanical Museum is perhaps the Royal Garden at Kew, with its colossal herbarium and its special Museum of economic botany, both standing in the midst of great botanic gardens. The Royal Botanical Museum in Berlin and the herbaria of the Imperial Botanical Garden in St. Petersburg are other examples.

Of specialized Geological Museums, the Imperial Cabinet in Vienna is a good type. The Museum of Practical Geology in London, founded to exhibit the collections of the Survey of the United Kingdom, and also in order to show the applications of geology to the useful processes of life is another type of the same class. The Department of Economic Geology in the Field Columbian Museum of Chicago—an outgrowth of the Exposition of 1893—represents this idea in the new world.

Besides the great special Museums, there are the Museums of local natural history, intended to show the natural history of a special region, or, it may be to illustrate its resources in some restricted branch.

The Royal Museum of Vertebrates in Florence, devoted to the vertebrate fauna of Italy, is a type of this class, and many local Museums are so prominent in some special field (such as ornithology or entomology), that their other activities attract little attention.

E.—TECHNOLOGICAL OR INDUSTRIAL MUSEUMS.

1. The Museum of Technology or Industrial Museum is devoted to the industrial arts and manufactures, including :

- (1). Materials and their sources.
- (2). Tools and machinery.
- (3). Methods and processes.
- (4). Products and results.
- (5). Waste products, and undeveloped resources.

The interests here treated are thus classified :

- (1). Primary or exploitative industries (as Agriculture, Mining or the Fisheries).
- (2). Secondary or elaborative industries (as the Textile industries, the Ceramic Industries).
- (3). Auxiliary industries (as transportation).
- (4). Technical professions (as Engineering, War, Medicine, Engraving).

The final product of one industry (primary or secondary) may become a material or tool in another art industry or handicraft.

2. Technological Museums come in contact with others as follows :—

with the Natural History Museum in respect to primary materials ;

with the Anthropological Museum in the matter of tools and processes, especially if historical and retrospective collections are undertaken ;

with the Art Museum in regard to certain products in which a high degree of æsthetic merit has been attained ;

with the Commercial Museum in respect to all products and materials used in commerce and manufactures.

3. There is no such thing in existence to-day as a General Technological Museum, conducted upon a liberal plan and doing useful educational work. The possibility of establishing such a Museum remain to be demonstrated. Attempts have been made at the close of various international expositions, but without success.

4. It is possible that experience may show that Museum work in this field can best be done in connection with Museums of Natural History and Anthropology, organizing sections of economic zoology in connection with Zoological Museums, economic geology and botany, respectively with the general botanical and geological collections. In this way, at least, the natural products and the crude materials could be disposed of to advantage, and the manufactured products, tools and processes, on the other hand, could be shown by the Museums of Anthropology and Art, and in connection with the Mechanical or Patent Museums; though after all a

factory in actual operation is the best place to study most modern industries. The constantly changing interests of commerce, dependent upon changing fashions and the caprice of markets might safely be left to the Exposition and Fair, or, if need be, cared for by commercial organizations. In the City of Philadelphia, for instance, there is a most permanent exhibition of objects and materials used in the construction and ornamentation of houses, kept by the "Building Trades' Association."

F.—COMMERCIAL MUSEUMS.

1. The Commercial Museum has to do with the salable crude material and manufactured articles; with markets, means of commercial distribution, prices, and the demand and supply of trade.

2. It properly may be connected with the Technological Museum, but for the fact that its purposes are likely to be more akin to those of the Exposition or Fair, involving a frequent renewal of exhibits in connection with commercial changes, and often certain features of competitive advertising or display on the part of private exhibitors.

3. The function of this class of Museums is two-fold :

- (a). To exhibit to home producers the character and location of foreign markets.
- (b). To exhibit to foreign buyers the location and products of the home producer.

4. Although the usefulness of the Commercial Museum has not yet been fully demonstrated, it is conceivable that it might be of great service, could it be made the medium of wide international communication, and the means of a comprehensive system of exchange, through

which the collections should be kept up to date and indicate the condition of the various markets of the world.

Essential to the success of such a Museum would probably be a bureau of information, through which practical knowledge concerning prices, shipment, and the quality of products, might be obtained by manufacturers and other interested persons, and samples distributed for use in experiment and comparison.

COMMENT.—Examples of Commercial Museums may be found in the Musée de Melle at Ghent ; that of the Chamber of Commerce at Liège, founded in 1888, and the Ottoman Commercial Museum established in 1890 at Constantinople. These are too recent, however, to afford many lessons.

G.—NATIONAL MUSEUMS.

1. National Museums contain the treasures belonging to National Governments and are legitimate successors of those treasure-houses of monarchs, princes and ecclesiastical establishments which until within the last two centuries were the sole representatives of the Museum idea. Every great nation now has a Museum, or a group of Museums more or less liberally supported, and intimately connected with the educational undertakings of the Government ; often, when there are several great cities under one Government, each has its own system of Museums, and these form the national system.

2. In most countries of Continental Europe the collections of the national universities form a part of national Museum system and are exceedingly efficient when thus administered.

3. National Museums have opportunities which are not often shared by those under state control, and their responsibilities are correspondingly great. They should

occupy specially those fields which are not provided for in the other Museums of the country in which they exist, and should not only refrain from competition with these Museums, but afford to them unreserved co-operation.

COMMENT.—The principal purpose of a National Museum must be, as Jevons has well said, “the advancement of knowledge, and the preservation of specimens of works of art which hand down the history of the nation and the world.”—In other words, to serve as Museums of record and research. It is by no means impossible, however, for them to render excellent service as educational Museums, and quite independent of other considerations, they can rarely afford to sacrifice the material advantages gained from engaging in educational work.

A serious obstacle to success in this direction is the vast amount of material which they all possess, and the lack of space in which to admit it. This difficulty may be partly overcome by a liberal assignment of objects to that portion of the study series which is not on exhibition.

A National Museum may not, it is true, advantageously attempt to install its separate departments in such manner as to produce the unity of effect possible in small specialized Museums. This, however, is due to the fact that they are obliged to classify their material more strictly, for the attractiveness of a specialized Museum grows largely from the fact that many illustrative objects are introduced into the exhibition series which are not strictly in place. The extreme attractiveness of fishery exhibitions, for instance, grows from the fact that so many interesting objects only incidentally connected with the fisheries may be introduced as a setting for the objects directly related to the fisheries.

A result of the same kind is obtained in the Museum of Practical Geology in London, where a selected series of products of all the arts deriving their material from the mineral kingdom—glass, pottery, gems, metal-work, and many similar groups are brought in, legitimately increasing the attractiveness of the Museum to the visitor and its instructiveness to the student.

Though the great general Museum cannot vie in this respect with the local Museum, it has a certain advantage of another kind in its very wealth of material, for the display of vast collections, assembled from all parts of the earth and covering it may be acres of floor space, strictly classified and arranged so as to show mutual relationships, affords in itself the most impressive lesson. While in smaller Museums the study of individual objects may be easier, in those of the other kind there is a better opportunity for the study of great general relationships.

H.—LOCAL, PROVINCIAL, OR CITY MUSEUMS.

1. To Museums of this class belongs the duty of preserving all that which is characteristic of the region or city in which they are located. Every state or province should have an institution of this kind to care for material illustrating its own geology, zoology, botany and archæology. Every city should have an historical collection for memorials of events in its history and that of its representative men.

2. It is legitimate and desirable that Local and Municipal Museums should also enter upon general Museum work of a scientific and educational character. They may form collections of a general character, in order that their visitors may see and study the unfamiliar products of foreign lands, as well as those of local interest. For Museums of this class, models, casts, copies and pictures of objects not actually obtainable, may be used.

3. It is often advantageous in small communities for the Museum and public library to be combined under one roof and one management.

I.—COLLEGE AND SCHOOL MUSEUMS.

1. Museums of this class are intended for the use of teachers in connection with their classroom and laboratory instruction and to re-inforce the library in the no less important work which it performs for the student.

2. It need scarcely be said that it is impracticable for the smaller teaching Museums connected with schools and colleges to carry out the thorough specialization which is attainable in large institutions. A small collection, however scanty and imperfect it may be, is of great value, not only for study purposes in connection

with some school or college and for exhibition to the local public of a small town, but also as a nucleus for future development.

3. The college or school Museum often becomes the local or city Museum for the locality in which it is situated, and what has been said about Museums of the latter class then becomes applicable to the College Museum.

J.—PROFESSIONAL OR CLASS MUSEUMS.

1. Professional Museums are those formed specially for the use of groups of specialists and for the education of specialists. Here belong medical, surgical and pathological Museums; military and naval Museums; mechanical Museums (such as those connected with patent offices, and the Conservatory of Arts and Manufactures in Paris); Museums for special arts (like the Textile Museum connected with the Gobelin establishment, the Museum of Porcelains in Sèvres, the Museum of Mosaics in Florence), and certain scientific Museums like that of the Geological Survey of Great Britain—the Museum of Practical Geology,—the Museo Psicologico in Florence, founded by Mantegazza, and many others.

2. Such institutions, usually under the control of a society, school or specialized bureau, although they may allow inspection by the public, do not necessarily undertake general educational work, but may with propriety consult first, in all matters relating to administration and display, the interests of the class for which they are formed.

K.—PRIVATE MUSEUMS OR CABINETS.

1. Such collections undertake work in only one portion of the Museum field—that of fostering scientific and

historical studies,—and so long as they are fruitful in this direction, the manner in which they are administered concerns only the persons by whom they are controlled. It is well that there should be many Museums of this kind, and that those who work in them should not be encouraged to dissipate their energies in attempting to do too much of the work which belongs to institutions of other classes and for which there should be held responsible. These are to all intents and purposes scientific laboratories.

2. The private collector is of the greatest service to the public Museum. He can, by the use of private wealth or individual freedom, do many things which the officers of a public Museum cannot.

3. The private cabinet is the school in which the Museum administrator forms the tastes and receives the preliminary training which fits him for his profession. There is much truth in the remark of Jevons that the best Museum is that which a person forms for himself. If everyone could do this there would be no need for public Museums, but since they cannot, the person who has formed a private collection ought to be able to manage one for the use of the public, since he better than anyone else is able, in considering the needs of the Museum visitor, to keep in mind that saying which is so useful a guide in Museum practice—"Put yourself in his place."

4. Private collectors should be encouraged for educational reasons also, for it has been frequently remarked that the men who have had in youth the training afforded by forming a collection have derived therefrom great advantage over others, even though they subsequently pursued commerce or the learned professions.

V.—THE USES OF SPECIMENS AND COLLECTIONS.

A.—THE USES OF SPECIMENS.

1. Specimens are like the types in a printing office. They may be sorted in the cases in convenient order, so as to be accessible when needed, and may be used to make intelligible almost any train of thought or series of ideas, each being available to hundreds of different relationships.

2. A Museum is rarely justified in exhibiting all its materials: as well might a publishing house insist upon using every piece of type in its possession in the printing of each book which it issues.

3. An exhibition-series, when properly installed and labeled, is usually most effective when limited in extent.

4. Such a series should not only be limited in extent, but also selected and arranged as to produce a certain unity of effect.

COMMENT.—This principle has been stated by Jevons, who writes: "There may be many specimens exhibited, but they ought to have some degree of relation that they may conduce to the same general mental impression. It is in this way that the Thorwaldsen Museum at Copenhagen exercises a peculiarly impressive effect upon the multitude of all classes of Danes and Swedes who visit it. This Museum contains in a single building almost the whole works of this great sculptor, Thorwaldsen, together with all the engravings and pictures having reference to the same. Very numerous though the statues and bas-reliefs are, there is naturally a unity of style in them, and the visitor as he progresses is gradually educated to an appreciation of the works. In somewhat the same way we may explain the ineffaceable effect which certain other foreign galleries produce upon the traveller, especially those of the Vatican. This is not due simply to the excellence of any particular works of art, for in the Louvre or the British Museum we may see antique sculptures of equal excellence, but in the principal Vatican galleries we are not distracted by objects belonging to every place and time. The genius of the classical age spreads around us, and we leave one manifestation of it but to drink in a deeper impression from the next."

The Museo delle Belle Arti in Sienna, the collections in the Monastery of San Marco in Florence, the Musée Gallo-Romain at St. Germain near Paris, the Museo Borbonico in Naples, the Musée des Thermes in the Hotel de Cluny, the German National Museum in Nuremberg, the Museo de Ultramar in Madrid, the Museum of Practical Geology in London, all have been successful in maintaining this unity of effect.

A noteworthy example of a Museum of limited scope in which unity of effect is sacrificed, is the Musée Guimet in Paris, although notwithstanding this effect it is one of the most interesting and beautiful small Museums in the world. In this instance it is evidently due to the fact that the original purpose of the Museum—which was to illustrate the comparative history of religions—has been modified by the admission of extensive collections illustrating the arts of the Orient, and that these are not separated in their installation from the religious collections.

Great National Museums are usually so hampered in the matter of space that they are not able to attain to such unity, and perhaps it is not equally important in these great establishments in which popular education is only one of several purposes.

5. Single or unrelated specimens, though valuable or interesting, are in themselves of little moment in comparison with series of much less precious objects which unite to teach some lesson to the student or visitor.

6. Specimens are often most useful when placed in a reserve or study series, to be used by special students or to be exchanged, or given to other Museums.

7. Advancement in a Museum is effected, not only by accession and enlargement, but by the constant substitution of better specimens for study and exhibition, by improvements in methods of display and labeling, and by publishing contributions to knowledge based upon the collections.

B.—THE STUDY SERIES.

1. The effectiveness of a Museum as an agency for the increase of knowledge and for higher education depends upon the maintenance of a study series, the administration of which should be upon a plan quite different from that employed for the exhibition series.

2. While it may be desirable to exhibit publicly many large or indestructible objects belonging to the study series, this series should be as a rule permanently arranged in laboratories and store-rooms not accessible to the general public.

3. The study-series is the storehouse from which the exhibition-series is replaced or extended, and from which the needs of other Museums may be supplied.

4. Objects of the following classes should never be placed in the exhibition series :

A. Those which are unique or very rare, and liable to destruction from exposure to light and dust.

B. Those which are the types of descriptions, except when large and indestructible.

C. Those belonging to series which are often required for purposes of comparison by students.

5. In collecting materials for the study series, the needs of the future as well as those of the present should be kept in view. Specimens in this series should therefore be acquired in quantities sufficiently large to meet the needs of students hereafter. While nothing of value should be lost, it is questionable, however, whether material should be sought in large quantity when there is no indication that it will soon be needed.

6. The fact that an object is common now is no indication that it will remain so, and the abundance of any kind of objects in a given locality, is often good evidence that it is rare in most other parts of the world.

7. Specimens in the study series, though hidden from sight, should be the object of care as solicitous as that bestowed upon the exhibition series, and should be available upon demand like the books in the stack-rooms of a library.

C.—THE EXHIBITION SERIES.

1. The "People's Museum" is that portion of a Museum which is on public exhibition: the "Student's Museum" that which is devoted to laboratories and lecture-rooms. The "People's Museum" should be much more than a hall full of specimens in glass cases. It should be a hall full of ideas, arranged with the strictest attention to system.

2. The ideas which a Museum is intended to teach, can only be conveyed by means of labels.

As I have said in a previous paper :

An efficient educational Museum may be described as a collection of instructive labels, each illustrated by a well-selected specimen.

3. The effectiveness of a museum *for the use of the public at large* depends chiefly upon the following considerations :

A. There should be a careful selection and effective arrangement of the specimens exhibited (which implies the exclusion of many objects in themselves attractive and interesting).

B. The specimens for exhibition must be chosen solely with reference to the lesson they can teach, singly or in combination.

C. *A small exhibition series, complete within its own limits, systematically arranged, fully labeled and effectively displayed, is far more useful than a vast collection exhibited without reference to its teaching power.*

D. *To complete a series, any specimen is better than none.*

E. A copy, model or picture of a good thing is often more useful than an actual specimen of a poor one.

F. A picture or model, may often be shown to advantage in place of a minute or unintelligible object.

G. Books, manuscripts, pictures, maps, etc., become specimens when treated in the Museum method.

H. There should be a *thorough system of labels*, written in simple language, supplemented by pictures, diagrams, maps and books of reference.

I. Cases, labels, colors of backgrounds, aisles, and all the practical details of arrangement, however minute, should be considered with the comfort and physical ease of the visitor in mind, since the use of a Museum is at best necessarily attended by fatigue of eyes and of body, which may be greatly lessened by the adoption of proper devices.

K. Installation ideals cannot be too lofty.

D.—CUMBERSOME AND SUPERFLUOUS MATERIALS IN COLLECTIONS.

1. There are few objects which may not be used in Museum work. It does not follow, however, that any one Museum should attempt to include such objects. There are many which in the present stage of Museum practice may be entirely neglected. If any Museum were to be extended to the limits of its possibilities, a dictionary might be made to serve as an alphabetical index to its contents.

2. One of the chief perils to a Museum is the possession of vast collections.

3. Not the least important duty of the curator is to prevent the accession of undesirable material.

4. Material not germane to the plan of a Museum should be exchanged or given to the other Museums which have uses for it. What is expensive and unprofitable to one may be of the greatest value to another.

E.—SYNOPTICAL AND SPECIAL COLLECTIONS
WITHIN MUSEUMS.

1. Synoptical or Dictionary Collections are advantageous in Museums of every class. Their purpose is to teach some special lesson by means of a small or complete series of specimens, arranged, labeled and provided with all possible illustrative accessories.

A synoptical series with a full complement of descriptive labels forms for any science an elementary manual, the labels forming the text, the specimens the illustrations.

COMMENT.—A collection of this kind in a Natural History Museum may either illustrate the principles of classification and phylogeny, those of geographical distribution, or may deal with the problems of comparative morphology. One of the best of the latter classes is, that in the great central hall of the British Museum of Natural History, while an excellent type of the second class is the Museum of Comparative Zoology; and of the first, that developed under the direction of Mr. Higgins in the Liverpool Museum.

Collections illustrating systems of crystallization and scales of hardness and color are found in many mineralogical cabinets.

Many of the best school Museums are practically synoptical collections, and this and nothing more is what they should always aim at.

2. In some collections there is a similar separation of certain objects with a less definite purpose,—as for instance in the well known Tribuna in the Uffizi Gallery in Florence: in many art Museums there is a similar effort to bring together their most valuable and famous possessions in one central hall.

3. There is no limit to the possibilities in the way of developing special collections, and such collections with judicious treatment, do more than anything else to add to the attractiveness and individuality of a Museum.

The collections of British birds in attitudes of life, mounted in the midst of their natural surroundings, at

South Kensington, is one of the most striking and memorable features in that Museum. A similar collection in the Museum of the University of Pisa, formed early in this century by Paolo Savi, though on a smaller scale, is no less prominent a feature of that smaller Museum. There are several special halls in the Museum at Naples—especially that containing the collection of burnt manuscripts from the buried city—which are unique. Numerous other examples might readily be cited.

F.—LOAN COLLECTIONS AND ITINERATING MUSEUMS.

1. Large Museums may greatly increase their educational effectiveness by lending special collections, well labeled and arranged, to towns not provided with Museum facilities, and by replacing these from time to time with others. This has been done with success by the Department of Science and Art in Great Britain, and it has resulted not only in a great improvement in the provincial Museums throughout the United Kingdom, but in the establishment of many new ones.

COMMENT—This system appears to have grown out of the suggestion made more than half a century ago by George Rennie, and others, to the Committee on Arts and Manufactures appointed by the House of Commons.

2. In the United States the same thing has been attempted in requiring the National Museum, as well as the several Departments of the Government at Washington, to exhibit in the great expositions which have been held from time to time in the principal cities. This method is much more costly than that employed in Great Britain, and it will scarcely be claimed that it is equally effective.

VI.—THE PRESERVATION AND PREPARATION OF MUSEUM MATERIALS.

A.—CONSERVATISM AND TRUTHFULNESS IN THE HANDLING OF MUSEUM MATERIALS.

1. It is not only essential that the full history, locality, original appearance, etc. of each specimen should be fully recorded, but that the specimen itself should be preserved from mutilation, distortion, and all other harm. Carelessness is the unpardonable sin in a Museum worker, and the officers in charge of valuable collections should be held to a strict accountability and if need be placed under bond, not only for the safety, but for the proper treatment of the treasures in their care. Preparators and taxidermists should be kept under the strictest surveillance.

B.—REPAIRS AND RESTORATION OF SPECIMENS.

1. Repairs are legitimate when necessary for the safety or permanent preservation of objects, for keeping together the parts of objects which have been broken, but in the interests of truth and science the fact that an object thus repaired should never be disguised.

2. This principle applies to natural history specimens, to archæological objects, and to works of art as well.

3. Restoration, or the replacing of missing parts, is rarely defensible when in the process of restoration any portion of the original object is covered up. Restorations made in such manner that the part restored is not at once distinguishable, are unpardonable. If it is necessary to restore missing parts, the restorations should be made upon a cast or model, and not upon the original.

COMMENT.—This principle has reference to Hypothetical Restorations. It is quite permissible to restore upon the original specimens, in Natural History collections, where there are in existence similar specimens from which further guidance may be obtained.

C.—COPIES.

1. Copies are available under certain limitations. Sculptures, coins, metal-work, many ethnographical objects, architectural models, and many products of the decorative and industrial art may be reproduced easily and inexpensively, and the copying of pictures though more difficult is still practicable. In natural history, as has already been said, only fossils can advantageously be reproduced by copies.

2. *A copy of an important object is always more desirable for educational use than an original of minor significance.*

D.—MODELS.

1. Models may also be used to represent objects which are unattainable, or from their magnitude or minuteness* unavailable. Models may also be used to replace alcoholic preparations, or in the place of pictures, when the latter are less effective. Aquatic invertebrates, fishes, reptiles, cetaceans, figures showing the races of mankind and abnormal and normal developments of the human body, and almost everything in the field of anatomy, osteology and embryology can be shown admirably by the use of models.

E.—PICTURES.

1. Pictures are often better than specimens to illustrate certain ideas. The races of man and their distribution, for instance, can only be shown by pictures and maps.

F.—BOOKS.

1. Certain kinds of books are more useful and safer in the Museum than on the library shelves, for in the Museum they may be seen daily by thousands, while in

* Where enlargements are employed it is well to place the actual objects by their side, to give an idea of the scale of enlargements,

the library their very existence is forgotten by all except their custodian. Books such as Audubon's "Birds of North America," Gould's "Humming Birds," and Owen Jones's "Alhambra," are a few among the numerous works of which everyone has heard and which everyone wants to see once in his lifetime. In a library they are probably not examined by ten persons in a year; in a Museum the volumes exposed to view in a glass case, and a few of the most striking plates attractively framed and hung upon the wall near at hand, teach a lesson to every visitor.

G.—THE MOUNTING OF ANIMALS.

I. Taxidermy is allied to sculpture and should be governed by the same canons of synthesis and repose. The attitudes of nature should be preserved, but action should be avoided except in the case of groups mounted in the midst of natural accessories, and even then action should never be violent. In mounting specimens to be arranged in the systematic series, the attitudes should always be simple and in some degree conventional and uniform.

H.—TYPES AND UNIQUES.

I. These should always be marked in some conspicuous and unmistakable manner, and if not placed in special cases, so labeled that their value may be understood by all.*

The safety of types should be provided for by special rules, and it is doubtful whether they should ever be allowed to leave the building in which they are deposited.

* In addition to the usual label, a wafer or painted spot of bright color, red, or green, greatly aids in making a type conspicuous.

2. In Zoology, Botany, or Mineralogy, a type is a specimen which has been described in giving a new specific name. Besides types of new species, there are equally valuable specimens which have served as the foundation of critical revisions or monographs of groups, which are equally deserving of special protection. Specimens which have been figured in standard works are subject to similar treatment.

I.—DUPLICATES.

1. A duplicate, from the Museum standpoint, is simply a superfluous specimen. A collection may possess scores of specimens at first view seemingly precisely identical, and yet not be able to spare one of them. Specimens can never be separated as duplicates until after the collection to which they belong has been exhaustively studied and the results of the study published. Even then there is danger in parting with them.

COMMENT.—The practice in the United States National Museum is to reserve from the material upon which a given memoir has been based, enough to render it possible to re-write the memoir from the beginning, if every copy should be destroyed.

2. In great Museums of research it is necessary and practicable to preserve extensive series of specimens, representing every possible variation and a great number of localities. In smaller Museums this cannot be done, except, it may be, in special fields, and the lesser Museums can usually throw a much larger proportion of specimens into the duplicate series.

3. The use of duplicates is for exchange and distribution. Their value when thus dispersed depends upon the most accurate identification and labeling, based upon comparisons with the reserve-collection from which they are taken.

VII.—THE ART OF INSTALLATION.

A.—INSTALLATION METHODS.

1. The arrangement and mounting of collections for exhibition, commonly known as their "installation," is an art worthy of serious attention on the part of every Museum officer. This art is allied to certain branches of architecture, especially that of interior decoration, but the services of an architect are not always to be had, and the man who is responsible for the arrangement of the halls and cases in a Museum should be able to do this work effectively. If a collection is to be exhibited at all, it should be done well, and I have little sympathy with my judicious friend who protested against the writing of this chapter on the ground that such "considerations of upholstery" are beneath the dignity of an institution of learning.

The success of installation, like that of every art, depends largely upon attention to minute details. Insignificant as they may seem, the slightest of these is as worthy of consideration, as that which seems to be the greatest.

2. Installation-work has to do with two matters : (a) the arrangement of halls and of cases, and other objects, with relation to the halls, light, and general effect ; (b) the construction and fitting of cases, and the arrangement of objects and labels within the cases. The form and arrangement of labels is also intimately connected with installation, but this will hereafter be discussed under the head of *labels*. (See VIII., A. 1—9, D. 3.)

B.—THE ARRANGEMENT OF HALLS.

Among the essential features of effective arrangement of floor space, are the following :

1. An arrangement in each hall, and especially in that which is first entered, which shall convey to the visitor

an impression of the character and aims of the Museum, and at the same time give an impression of repose, dignity, and beauty. The impression which the mind receives immediately after the first door has been passed, is always the strongest and most lasting.

2. A single entrance and one consecutive line of progress through the halls is most advantageous, both to administrator and visitor, and should be duly considered.

3. If the main, or circulation aisles, be wide and uninterrupted, and there are occasional broad spaces in front of important exhibits, the passages between the cases may be very narrow, provided the cases are built with this view.

4. The exhibits should be so arranged that their general features may be apprehended in a rapid stroll through the halls, while those wishing to study a special subject minutely may find the extended collections in close proximity to the landmark exhibits intended for the casual visitor. A striking exhibit at the end of a wide aisle may be used to draw visitors to a particular portion of the hall.

5. In the interest of good light and general effect, the lower cases and objects should be placed nearest the main aisles and the centre of the hall, while tall cases should be farthest from the eye.

6. In large halls, a system of alcoves with liberal aisles, or a double, triple, or quadruple system of circulation aisles may be used to advantage.

7. Transverse aisles are usually objectionable: when used, a wide, open area near the centre of the hall is advantageous. This may be enlarged so as to surround some striking and symmetrical pedestal-exhibit. (A formal case should never interrupt the course of an aisle).

Very wide aisles may often be advantageously divided by symmetrical and graceful pedestal-exhibits, by which the current of visitors is parted.

8. Objects too large to take their proper place in the cases may be declared "out of classification" and used decoratively, on the walls or pedestals, with cross-reference labels.

9. A small label, map or diagram at the eye level is as conspicuous as an immense one hung high on the walls. Such accessories should only be made large when needed for decorative uses and treated in a decorative manner.

10. These principles apply also to exposition installation, in which however an "open system" of installation is needed, with twice or thrice the floor space for the same material, that is required in ordinary Museum installation.

C.—CASES, AND THEIR ARRANGEMENT.

1. The function of a case or pedestal is to protect the exhibit, and to display it to the best advantage. Its character should be determined, not only by its intended use, but by the position in which it is to stand, the form of adjacent cases, direction and amount of light, &c. Cases should therefore be built only as need arises. They should be planned so that they can be used with advantage in halls that have light from overhead as well as from the sides. This precaution will simplify the problem of lighting at night.

2. Cases should not attract attention either by their austerity of design or workmanship, but should be simply appropriate and pleasing, well-locked, dust-tight and nearly air-tight. The frames should be as light and inconspicuous as possible: transverse bars across an exhibited object are unpardonable. Glass should be as

large, clear, and good as possible, for economy in glass is rarely true economy.

3. The space above the six-foot line is rarely of use, while for small objects nothing is gained by display below a height of thirty inches : large objects may be shelved at ten or twelve inches from the floor. Where the aisles are very wide, lower shelving for small objects is possible, but it is more economical to shelve high, narrow the minor aisles, and use the lower parts of the cases for storage-closets.

4. A system of interchangeable units in drawers and mounts, as well as in cases, is of the highest importance as facilitating the transfer of cases from hall to hall and saving cost in manufacture. This should include not only the exhibition cases, but those in the storage series as well.

5. Mobility is even more necessary. All floor cases and pedestals should have fixed rollers or roller trucks so that they may be moved with their contents, and all fixed cases should be built with screws so as to be readily moved from hall to hall.

6. Cases which permit a fixed installation and a re-combination of units without a re-handling of specimens are economical and in many departments indispensable. Possibility of interchange of units between the exhibition and storage systems of cases is indispensable.

7. For the interior of cases, the prime need is that the system of shelving should be as flexible as possible, and that the inside colors should be restful to the eye and no lighter in color than the necessity of illumination may require.

7. The mountings for individual specimens should not attract the eye either by beauty or ugliness, but should support and set off the specimens, and by their uniformity

and propriety add to the appearance of system and order in the exhibits.

3. The inscription should be so attached that it cannot be removed or effaced, and, when possible, engraved or painted upon the object itself. When a mark of this kind is not possible, a ticket or label, preferably the latter, should be attached in the most prominent manner. Even when a ticket is used, at least the catalogue number should be inscribed upon the specimen, if this can be done without injuring it. These requirements do not apply so much to large and heavy objects permanently installed in an exhibition series, as to those kept, even temporarily, in a study or storage series. Fragile objects, or those which cannot receive a permanent mark, should be kept in type receptacles of glass or other material, upon which should be placed the inscription. Even when preparations are thus kept in jars or boxes, they should when possible, have some ticket attached to them bearing the same number as the receptacle in which they are placed, so that if specimens are taken out they shall not be put back in the wrong receptacle.

COMMENT.—In the United States National Museum, each alcoholic preparation is marked with a ticket of block tin, on which the catalogue number is stamped, the same number being engraved with a diamond upon the glass jar in which it belongs.

4. A specimen may consist of a single object, or of a large number of similar objects from one source. For instance, a collection of engravings in one portfolio; a collection of similar kinds of stone implements from one excavation; a number of animals or plants of one species, from the same locality.

For lack of a better term, the material included in a Museum catalogue, number, whether a single specimen

or many, is called a "lot." This term is chiefly employed in Museum statistics.

5 Explorers and collectors in the field should keep their records by catalogue and label, in accordance with the principles laid down for Museums. Their work thus gains immensely in definiteness and value, and their temporary labels, catalogue numbers and registers, are easily brought into relation with those of the permanent Museum series. Private collectors, no matter how small their field of activity, are in duty bound to follow the same methods of record.

6. The principles crudely stated above may require modification, but the fundamental ideas are applicable to collections of every kind, public and private; and the owner of any interesting object, be it picture, manuscript, decorative object, or heirloom, should be urged to label his possessions for the benefit and protection of posterity.

7. What is inscribed upon the specimen is properly a "mark," what is attached to it upon a card or its equivalent is properly a "label." The term "etiquette," used in France, Germany, and upon the continent generally, is equivalent to our "label." But neither the term "etiquette" nor its equivalent "ticket," though the last is allowable in the same sense as "label," are often used by those who speak English.

In practice, it is convenient to speak of the inscription which serves to identify an individual specimen, whether inscribed upon it or attached to it, as its "label." Thus the individual or "specimen label" should be clearly distinguished from the "exhibition label," which has quite a different function and which ought to have a more distinctive name.

VIII.—RECORDS, CATALOGUES AND SPECIMEN LABELS.

A.—MUSEUM RECORDS.

1. The value of a collection depends in the highest degree upon the accuracy and fulness of the records of the history of the objects which it contains.

2. A Museum specimen without a history is practically without value, and had much better be destroyed than preserved.

COMMENT.—There will be many legitimate exceptions to this rule, but it can do no harm to state it forcibly, since the Museum Curator is more likely to err on the side of saving too much.

B.—CATALOGUES OR REGISTERS.

1. A Museum catalogue is a numerical list or *Register* in which each specimen is recorded, under a separate number, in connection with which are entered all the facts known in regard to its history.

2. The catalogue should be supplemented by a file-case, in which should be preserved notes, letters, or papers, relating to each specimen classified under the catalogue number.

3. The numerical *Register* may advantageously be supplemented by card catalogues systematically arranged.

4. In a large Museum, or one of a varied character, it is desirable that there should be separate catalogues or Registers for the several departments, each with a separate series of numbers.

5. When a Museum has a system of departmental catalogues, there should be a general catalogue, or *Accession Book*, in which "accessions" are entered in the order of their reception. The term "accession" is used to describe the material received at one time, from one source, whether it be a single specimen or a shipload.

In connection with the *Accession Book* should be filed, under the "accession numbers," all invoices and correspondence relating to the special accession.

In each departmental catalogue a separate column should be provided, in which the accession number should be recorded. A large number of specimens in many departments may fall under one accession number.

6. There is much advantage in printing the catalogues of a Museum. When a collection is sufficiently rich in material to afford the opportunity for a scientific revision and classification of the science which it illustrates, the advantage is very great indeed, as is demonstrated by what the British Museum has accomplished.

7. When great general catalogues are not practicable, much advantage is gained by printing catalogues of special collections, however small they may be, provided that each is complete in its own field. A report, or memoir, upon a special collection may be made to serve the purpose of a special catalogue.

When printed catalogues can be well illustrated their usefulness is increased many fold, since by this means the treasures of one Museum are made available for study and comparison in every other Museum, as well as by the multitudes who have not the opportunity to see the Museums in person.

8. *Catalogues are the keys to the treasure-vaults of a Museum.*

C.—SPECIMEN LABELS, OR TICKETS.

1. The inscription which is inseparably affixed to each individual specimen is the most essential part of the Museum record; for this not only establishes the identity of the specimen but serves to show to what Museum it belongs. Registers and other records may burn, but the

individual label will remain as long as the specimen itself, to give to it authenticity and significance.

2. The inscription should not only refer definitely to the register by means of the catalogue number, but should if possible, contain a statement of locality, and the name of the collector or maker.

IX.—EXHIBITION LABELS AND THEIR FUNCTIONS.

A.—THE PURPOSE OF THE EXHIBITION LABEL.

1. The exhibition label is the principal means by which the treasures in a Museum are made intelligible to the public: the guide, the lecturer, and the published handbook, though each in a limited field more effective, being absolutely powerless when the needs of the great majority of students and visitors are concerned.

2. The labels describing the specimens in a collection are intended to take the place of the Curator of the collection when it is impossible for him personally to exhibit the objects and explain their meaning. When collections were small and visitors few, the Curator or owner of a cabinet was accustomed to conduct visitors in person among the cases, to take the specimens in his hand, to tell their names and where they came from, to indicate features of special interest, and to answer questions. This was in some respects an ideal way, when the Curator was a man of wide knowledge and so much of an enthusiast that he took pleasure in talking without limit. The method was not without defects, however, since the lecturer (for such he was in fact) selected for exhibition a limited number of objects which interested him, or which he supposed might interest the visitors, and gave the latter no chance for selection. Furthermore, the arrangement could not be such as to convey a sequence of ideas, such as a selected and well-

labeled series of specimens can do, and the spoken descriptions, being as a rule full of unfamiliar words, were not remembered. The printed label may be read over again and again, and is often copied into the visitor's notebook. Again, under the old system, examining a collection was looked upon rather in the light of amusement than study, and what might have been possible in the way of instruction was rarely attempted.

In these days, when the Curator attempts verbal instruction, it is by means of a lecture in the Museum lecture hall or, if a floor lecture, among the cases, surrounded by hundreds or scores of auditors, who may either take notes, or find the substance of the lecture in a syllabus or printed text-book prepared by the lecturer.

Where one Museum visitor listens to the Museum lectures, tens of thousands pass through the halls without a guide. They must depend entirely upon the labels for information; for guide books, if such have been printed, are rarely bought, still more rarely used in the presence of specimens, and though often taken home with the intention of studying them, are only in the rarest instances ever opened after leaving the Museum.

3. The function of a label then is a most important one, since it is practically only through the aid of the labels that visitors derive any benefit whatever from a visit to a Museum. Therefore—

A LABEL SHOULD ANSWER ALL THE QUESTIONS WHICH ARE LIKELY TO ARISE IN THE MIND OF THE PERSONS EXAMINING THE OBJECT TO WHICH IT IS ATTACHED.

4. The office of the descriptive label may be stated as follows :

A. The label must tell the name of the object; its exact and technical name always, and if there be one, its common name.

B. It must call attention to the features which it is important for the visitor to notice.

C. It must explain its meaning and its relations to the other objects in the same series. If it is a natural history specimen, it should explain its geographical distribution which if possible, should be plotted on a small map, forming a part of the label, and mentioning peculiarities of structure or habit.

If it is an ethnological object, its uses and construction should be explained, its materials named, if they are not obvious, and supplementary information given by means of pictures; and where pictures are better than words, these may be attached.

D. The exact locality, date of collection, and source of the specimen exhibited, should be mentioned.

E. For the convenience of visitors it is well, in many cases, to give the dimensions or weight of the specimen.

5. The label may be made to convey much information in addition to that which is printed upon it, by means of maps, pictures, and diagrams, which may be placed by its side to reinforce its teachings, and also by cross references to other specimens in the Museum, or to books on the Museum reading tables, or in its library.

6. Exact references from the label to the specimen which it explains may be effected by a system of reference numbers, such as are used to bring a diagram into relation with descriptive text.

Colors may be applied to portions of a specimen, in order to make the label system more intelligible; as for instance, when it is desired to compare similar parts in a series of specimens placed side by side, the same color in each signifying homology.

And "pointers" may be used upon the specimens to indicate the localities of small objects, or especially noteworthy features referred to on the label.

COMMENT.—The late Professor Moseley was one of the first to adopt these methods, in the Oxford Museum. The system of showing homologies by color was used in the Milan Museum as early as 1878, and has been very effectively used by Mr. F. A. Lucas in the United States National Museum.

B.—THE ART OF LABEL WRITING.

1. The preparation of labels is one of the most difficult tasks of the Museum man. The selection of the descriptive matter to be printed requires the best of judgment and the widest and most accurate information; while to determine the form and size of the different labels in a series, and to secure the best typographic effect, is equally difficult, and requires abilities of quite a different order.

2. A label may contain a vast amount of exact and valuable information, and yet by reason of faulty literary and typographic arrangement, have as little significance and value as a piece of blank paper.

3. Before a specialist is prepared to label a collection, he must be a complete master of the subject which the collection is intended to illustrate. After he has written the series of labels, if the collection is complete, he will have the material under control which would enable him to write a very complete book of reference upon the subject.

4. No task is more exacting than this form of *précis* writing. Not only is it impossible to conceal lack of perfect knowledge, but the information must be conveyed in a terse, concise and definite phraseology, such as is not demanded by any other class of writing, unless it may be the preparation of definitions for a dictionary. He who writes definitions for a dictionary, however, has usually the advantage of having before him numerous

other definitions of the same term which he needs only to collate and re-arrange.

5. A good descriptive label should do something more than impart information. It must be so phrased as to excite the interest of the person who is examining the specimen to which it is attached; to call his attention to the points which it is most important that he should observe; to give him the information which he most needs while looking at the specimen, and to refer him to the books by means of which he can, if so disposed, learn all that is known upon the subject illustrated.

6. The art of label writing is in its infancy, and there are doubtless possibilities of educational results through the agency of labels and specimens which are not as yet at all understood. It is clear, however, that the advice of the old cook in regard to making soup applies equally well to a good label; that "its merit depends much more on what you leave out than on what you put in." The value of this method of instruction is perhaps better understood by the most advanced writers of school text books and dictionaries than even by the average Museum worker.

COMMENT.—In Dr. Edward Eggleston's new "School History of the United States" engravings, portraits, pictures of historical localities, costumes, and archæological objects, are interspersed through the text, and each of these has a label of the Museum type surrounded by rules and separated from the text, with which it has usually only general relationship. The originals which are thus illustrated, if brought together would make an admirable Museum of American history, and the book itself could hardly be improved upon as a handbook to such a collection. The modern illustrated dictionary owes much of its success to the adoption of Museum methods, due perhaps to the fact that so many men familiar with Museum methods have been engaged upon the preparation of the latest American publication of this kind, the *Century Dictionary*, and the more recently published *Standard Dictionary*. These works thus impart instruction by methods very similar to those in use in Museums, except that they are much at a disadvantage by reason of their alphabetical

arrangement. This is, of course, one respect in which the Museum exhibition case has the advantage over the lecturer, who can only present one subject at a time, or over the writer of books, who is prevented by the size of his pages from bringing a large number of ideas into view at once. This difficulty has been in part overcome by the editor of the *Standard Dictionary*, in the great plates where are shown in one case all the principal varieties of precious stones; in another plate, all the races of the domesticated dog; in another, the badges of orders of chivalry. Even this, however, is far from reaching the possibility possessed by the Museum, with its broad expanses of exhibition cases, of showing a large number of objects so arranged as to explain their mutual relationship, and so labeled as to explain the method of arrangement.

C.—FORM AND SIZE OF LABELS.

1. The size and typography of the label are of the greatest importance. The best written label may be ruined by the printer; not only must the letters be large enough to be legible from the customary point of view, but the type must be pleasing in form, and so arranged as to lead the eye of the reader with pleasure from one line to another, and so broken into paragraphs as to separate from each other the topics discussed.

Furthermore, a system of subordinate sizes of type is essential, so that the most important facts shall first meet the eye. In many of the labels printed for the National Museum, type of four or five different sizes is used, the largest giving the name of the object, the next size the name of the locality and donor, the next its distribution, and so on, much in the order of importance of the topics already proposed, while the least essential illustrated matter at the bottom of the label is placed in the smallest type. The theory is that the largest type should give the information desired by the greatest number of visitors (by everyone); the next size, that needed by those who are studying the collection in a more leisurely way, and so on.

Too much cannot be said of the necessity of breaking the descriptive matter into short paragraphs, which should never be more than half-a-square in length.

COMMENT.—Where a label of great width is printed, it is believed that it is better to arrange the matter in two columns rather than to weary the eye by following back and fro across the card. Labels, as a rule, seem to be most satisfactory when nearly square, or with the height less than the width.

2. Much attention should be given to the selection of type and color for labels, it having been found that labels printed on white cardboard become dirty or turn yellow, besides being dazzling and hard to read. Many tints of cardboard which would otherwise be available cannot be used, because of their tendency to fade—objectionable in itself, and doubly objectionable when it becomes necessary to put a fresh bright label by the side of one which has become soiled in use.

Almost every sample of colored cardboard which has been tried in the United States National Museum has faded after a time. The most satisfactory has been one of greenish gray. This is temporarily in use in the Geological and Mineralogical collections, where a light gray color for the interior of the cases and shelves seems preferable, and also in the collection of birds, which is installed by preference in a somewhat dark apartment. The standard label board, however, is a heavy rough-faced manilla. The color being that natural to this fibre is unchangeable. There is no fading, little tendency to become dirty, and the soft, rich, brownish-yellow tone sets off admirably the heavy black lines of the antique-faced type which is used, and harmonizes well with the buffs and maroons which are favorite colors for case interiors. Cartridge paper in any tint of gray or light brown is an admirable material for labels, especially large ones. It must, however, be glued to a tablet. If this is made of dark wood with a bevel retreating from the edge of the label, forming a dark border, the effect is very pleasing. Labels thus prepared and mounted upon metal rods are used by the National Museum for general classification labels in the interior of cases.

D.—CLASSIFICATION LABELS.

1. In addition to the labels of individual objects there are "classification labels" which serve the same purpose as the volume, chapter, section and paragraph headings in a printed work.

For the smaller groups these are placed inside of the case, for the larger ones outside, often serving as "case labels."

2. The relationship of the objects in a series to each other may usually be indicated by the size of the labels, which should be uniform for objects of the same general character in the same case. When a deviation from this rule is necessary, if the size of the type remain the same, more space may be obtained, either by slight widening or slight lengthening; but in the same series, it should be always lengthened or always widened. Classification labels, which are placed unattached among the specimens, increase in size with the importance of the grade of that case.

3. There are limits to the possibilities of making labels speak by their size. An object at the top of a case, or on a pedestal, or in a case by itself, is always regarded as "out of classification," and its label arranged solely with reference to its appearance or utility in the place where it is to stand. It is necessary to vary the size somewhat in the same series, when, as in a long case of mammals, a small species and a large one are placed side by side. Here, for æsthetic reasons, the rule is usually set aside.

COMMENT.—It is the plan in the United States National Museum to have a large label, glazed and framed, at the top of each case or in front of each panel. These are printed on black or maroon paper in gold or silver letters. The labels in gold or black are printed from large wooden type, and are used to indicate the general system of classification of the cases upon the floor. When it is desired to use outside labels, glazed and

framed, which are not in this general classification series, we print with heavy-faced type in black upon manilla or cartridge paper, since the black upon yellow is more legible with comparatively small type than the gold upon black.

X.—GUIDES AND LECTURERS ; HAND-BOOKS AND REFERENCE-BOOKS.

A.—GUIDES AND LECTURERS.

1. In the days when Museums were small and visitors few, it was possible, as has already been said, for a Curator of a collection personally to conduct the visitors and to explain to them the collections ; but this can no longer be done under the changed conditions. The label and the hand-book have for ever replaced the guide, for an unintelligent leader can effect nothing but harm.

2. A modification of the guide system is still practicable under certain circumstances, as when a party of persons interested in some special subject are conducted through a portion of a Museum by a teacher or some member of the Museum staff who serves in this capacity. This is the floor-lecture system, which, however, to be efficient must be coupled with some method of excluding the general public from the alcove in which the party is for the time engaged.

3. Formal lectures in the lecture hall of the Museum, illustrated by specimens withdrawn from the cases, are exceedingly useful, although they reach but a limited number of persons. Such lectures are most useful when in courses and devoted to a special topic ; still better when they are addressed to a particular class in the community, as for instance the teachers in public schools.

COMMENT.—The courses carried on at the American Museum of Natural History in connection with the Normal School system of the State of New York are an example.

4. In university towns, the use of the lecture room and the illustrative resources of the Museum may to good advantage be placed at the disposal of the professors and their classes.

5. A member of the staff may sometimes do good service by inviting a group of visitors to his laboratory, in order to explain with the use of specimens and reference books some special point upon which they seek information.

B.—HAND-BOOKS AND GUIDE-BOOKS.

1. The hand-book and guide-book supplement the label system, and used in connection with labels, render still more unnecessary the services of a guide.

2. The guide-book, properly speaking, is a brief manual in which the plan of the Museum and the general character of its contents are described. It should have diagrams of buildings, showing the location of the various halls and their uses, and diagrams when necessary of the halls, showing the system of arrangement. The guide-book in short, is a general label for the Museum as a whole. Since guide-books are usually kept as souvenirs, they should contain a certain amount of descriptive and historical matter, and pictures of the building and of some of its most notable treasures.

3. The hand-book relates to a portion of the Museum, either a department or a special collection within the department, and should present the information conveyed by the exhibition labels belonging to the branch to which it relates.

When a collection has been well labelled, a complete hand-book may be made simply by combining the labels in proper order and printing them. If the collection is complete and well selected, the hand-book describing

it becomes an encyclopædic manual of the subject illustrated.

Printed catalogues, such as have already been referred to, often fulfil the function of hand-books, though usually too technical for that purpose.

The catalogue should be technical and exhaustive, and adapted for the use of the professional student. When it relates to a large collection, and especially when illustrated, it is too large to be convenient for general use.

A hand-book is usually intended for the use of the public and should be what its name signifies—a volume which may be carried in the hand by the visitor or general student.

The hand-book also serves to remind the visitor of what he has seen, and enable him to review the teachings of the Museum after he has left it; it supplements, and to some extent replaces the visitor's personal note-book.

4. The hand-book and guide-book should never replace the descriptive label attached to each exhibited object. The practice not uncommon in art galleries and expositions of designating objects by number and describing them only in the guide-book does not seem judicious, although in temporary exhibitions it cannot always be avoided. It is a relic of the days when it was thought legitimate by this means to force every visitor to buy a catalogue, and thus contribute to the revenues of the establishment.

C.—READING TABLES.

1. A certain number of bibliographies, dictionaries, and standard works of reference, directing visitors to the literature of the subject, should be placed in each hall, each table being devoted to the subject illustrated by the collections in the midst of which it stands. These

books may, for safety, be fastened to a reading desk or table.

2. It is often advantageous to display books within the exhibition cases, with the specimens, to teach visitors what books they should use in carrying on the studies suggested by their visit to the Museum.

D.—LIBRARY.

1. Every well appointed Museum should have a good reference library which should include the principal books of reference in regard to the various specialties with which it is concerned, and especially the great illustrated works relating to other museums, which cannot be displayed in the exhibition halls. This library should be freely accessible to visitors and provided with comfortable furniture and facilities for taking notes.

2. The Museum library should, if possible, be so situated as to form one of the features of the Museum, and the doors so arranged that visitors can look in without disturbing those who are reading. The effectiveness of such an arrangement will be appreciated by all who have visited the Musée Guimet in Paris, or the Museo di Ultramar in Madrid.

3. In addition to the general reference library, special collections of books may advantageously be developed in connection with the several departments of a Museum. So long as these are judiciously limited in scope, they cannot well be too extensive, since a technical library is always more useful when it is more directly under the influence of a specialist, than when administered as a part of a great general library, by professional librarians. In a library of this kind, much material not usually of much service elsewhere, pamphlets, cuttings, pictures,

technical manuscripts, &c., will accumulate, and be kept under control.

COMMENT.—In the United States National Museum, there are a considerable number of sectional libraries, shelved in proximity to the collections to which they relate, and under the direct care of the Curators. These are all under control, by means of a card catalogue, kept in the central library, where works of general interest are retained, and may be recalled at any moment by the Museum librarian.

XI.—THE FUTURE OF MUSEUM WORK.

A.—THE GROWTH OF THE MUSEUM IDEA.

1. There can be no doubt that the importance of the Museum as an agency for the increase and diffusion of knowledge will be recognised so long as interest in science and education continues to exist. The prediction of Professor Jevons in 1881, that the increase in the number of Museums of some sort or other must be almost co-extensive with the progress of real popular education, is already being realized. Numerous local Museums have been organized within the past fifteen years in the midst of new communities. Special Museums of new kinds are developing in the old centres, and every university, college, and school, is organizing or extending its cabinet. The success of the Museums Association in Great Britain is another evidence of the growing popularity of the Museum idea, and similar organizations must of necessity soon be formed in every civilized nation.

2. With this increase of interest there has been a corresponding improvement in Museum administration. More men of ability and originality are engaging in this work, and the results are manifest in all its branches.

The Museum recluse, a type which had many representatives in past years, among them not a few eminent

specialists, is becoming much less common, and this change is not to be regretted. The general use of specimens in class-room instruction and still more, the introduction of laboratory work in higher institutions, has brought an army of teachers into direct relations with Museum administration, and much support and improvement has resulted.

3. Museum administration having become a profession, the feeling is growing more and more general that it is one in which talents of a high order can be utilized. It is essential to the future development of the Museum that the best men should be secured for this kind of work, and to this end it is important that a lofty professional standard should be established.

B.—PUBLIC APPRECIATION OF THE MATERIAL VALUE OF COLLECTIONS.

1. The Museum of Nature or Art is one of the most valuable material possessions of a nation or a city. It is, as has well been said, "the people's vested fund." It brings not only world-wide reputation, but many visitors and consequent commercial advantage. What Alpine Scenery is to Switzerland, Museums are to many neighbouring nations. Some one has written that the Venus of Melos has brought more wealth to Paris than the Queen of Sheba brought to King Solomon, and that but for the possession of their collections (which are intrinsically so much treasure) Rome and Florence would be impoverished towns.

This is thoroughly understood by the rulers of modern Italy. We are told that the first act of Garibaldi, after he had entered Naples in 1860, was to proclaim the City of Pompeii the property of the nation, and to increase the

appropriation for excavations so that these might be carried on with greater activity. "He appreciated the fact that a nation which owns a gold mine ought to work it, and that Pompeii could be made for Naples and for Italy a source of wealth more productive than the gold mines of Sacramento." If capital is an accumulation of labour, as economists say, works of art which are the result of the highest type of labour must be capital of the most productive character. A country which has rich Museums, attracts to itself the money of travellers, even though it may have no other source of wealth. If, besides, the populace is made to understand the interest which is possessed by their treasures of art, they are inspired with the desire to produce others of the same kind, and so, labour increasing capital, there is infinite possibility for the growth of national devoted to the formation of Museums, to their maintenance, and to the education of the people by this means.

Suggestive in this same connection was the remark of Sir William Flower to the effect that the largest Museum yet erected, with all its internal fittings, "has not cost so much as a single fully-equipped line of battle ship, which in a few years may be either at the bottom of the sea or so obsolete in construction as to be worth no more than the material of which it is made."

COMMENT.—This principle was well stated more than half-a-century ago by Henry Edwards in his treatise on the "Administrative Economy of the Fine Arts in England," as follows: "In addition to the broad principle that public funds can never be better employed than in the establishment of institutions tending at once to refine the feeling and to improve the industry of the whole population, there is the subordinate but yet important ground of inducing and enabling private persons greatly to benefit the public by contributing towards the same end." "No country," he continues, "has more cause to be proud of that munificent spirit of liberality which leads private individuals to present or bequeath to the community valuable collections which it has been the labour of

their lives to form ; but to give due effect to this liberality and to make that effect permanent, it is necessary that the State step in and contribute its sanction and its assistance ; and in many cases the very munificence of spirit which has formed an immense collection, and given birth to the wish to make it national, has, by its own excess made that wish powerless without the active aid of the legislature. The actual cost, and still more the inherent value, of the collections of Sloane, Elgin, and Angerstein, made them in reality gifts to the nation, although they could never have been acquired (without gross injustice to the descendants of the large-minded collectors), had not Parliament made certain pecuniary advances on account of them. Whilst but for the foundation of the British Museum and of the National Gallery, the collections of Crache-rode and Holwell Carr, of Beaumont, of Sir Joseph Banks, and of King George III. would have continued in the hands of individuals.

C.—PUBLIC APPRECIATION OF THE HIGHER FUNCTION OF MUSEUMS.

I.—Museums, libraries, reading-rooms and parks have been referred to by some wise person as “passionless reformers,” and no better term can be employed to describe one of the most important of their uses.

COMMENT.—The appreciation of the utility of Museums to the great public lies at the foundation of what is known as “the modern Museum idea.” No one has written more eloquently of the moral influence of Museums than Mr. Ruskin, and whatever may be thought of the manner in which he has carried his idea into practice in his workingmen’s Museum, near Sheffield, his influence has undoubtedly done much to stimulate the development of the “people’s Museum.” The same spirit inspired Sir Henry Cole when he said to the people of Birmingham in 1894 : “If you wish your schools of science and art to be effective, your health, your air, and your food to be wholesome, your life to be long and your manufactures to improve, your trade to increase and your people to be civilized, you must have Museums of science and art to illustrate the principles of life, wealth, nature, science, art and beauty.”

And I never shall forget the words of the late Sir Philip Cunliffe Owen, who said to me some years ago : “We educate our working people in the public schools, give them a love for refined and beautiful objects, and stimulate them in a desire for information. They leave school, go into the pursuits of town life, and have no means provided for the gratification

of the tastes they have been forced to acquire. It is as much the duty of the Government to provide them with Museums and libraries for their higher education as it is to establish schools for their primary instruction."

2.—The development of the modern Museum idea is due to Great Britain in much greater degree than to any other nation, and the movement dates from the period of the Great Exhibition of 1851, which is recognized upon the western side of the Atlantic as marking an epoch in the intellectual progress of English-speaking peoples. The munificence with which the national Museums of Great Britain have been supported, and the liberal-minded manner in which they have been utilized in the cause of popular education and for the promotion of the highest intellectual ideals, has been and still is a source of inspiration to all in America who are labouring for similar results.

3.—The future of the Museum, as of all similar public institutions, is inseparably associated with the continuance of modern civilization, by means of which those sources of enjoyment which were formerly accessible to the rich only, are now, more and more, placed in the possession and ownership of all the people (an adaptation of what Jevons has called "the principle of the multiplication of utility,") with the result that objects which were formerly accessible only to the wealthy, and seen by a very small number of people each year, are now held in common ownership and enjoyed by hundreds of thousands.

In this connection the maintenance of Museums should be especially favoured, because these, more than any other public agency, are invitations to the wealthy owners of private treasures to give them in perpetuity to the public.

4.—If it be possible to sum up in a single sentence the principles which have been discussed in the present paper, this sentence would be phrased in these words :

THE DEGREE OF CIVILIZATION TO WHICH ANY NATION, CITY OR PROVINCE HAS ATTAINED IS BEST SHOWN BY THE CHARACTER OF ITS PUBLIC MUSEUMS AND THE LIBERALITY WITH WHICH THEY ARE MAINTAINED.
